

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for conveying data between ~~at least two users having a connection~~ terminals in a communications network comprising at least one low-bit-rate artery, ~~one or more arteries working at standard bit rates, a basic transmission unit, at least two adaptation units, and at least one adaptation layer protocol~~ and at least one standard-bit-rate artery, the data to be transmitted taking the form of packets having a size smaller than the size of ~~[[the]]~~ a basic transmission unit, the method comprising:

~~upstream from the low bit rate artery~~ receiving, from a first originating terminal at an adaptation unit ~~assigned to an originating user, collecting data from the originating user and~~ of a first switch in the communications network, data according to a first protocol;

converting ~~[[said]]~~ the received data into coded frames using a compression algorithm;

forming a packet of application data according to a second protocol, the packet of application data comprising a ~~[[number]]~~ plurality of the coded frames;

forming a Common Part Sublayer packet comprising the packet of application data and a Common Part Sublayer header including information required by at least one of the first or second protocols;

inserting the Common Part Sublayer packet into a first basic transmission unit at a rate of one packet per unit ~~and sending said unit through a network~~ for transmission to a first end of the low-bit-rate artery;

at the first end of the low-bit-rate artery~~[[,]]~~;

extracting ~~multiple~~ the Common Part Sublayer packets from the first basic transmission units and from basic transmission units received from different originating ~~users~~ and terminals;

multiplexing ~~[[said]]~~ the extracted Common Part Sublayer packets ~~[[in]]~~ into a second basic transmission unit ~~of a virtual circuit set up between the first end and~~ for

transmission to a second end of the low-bit-rate artery ~~according to the adaptation layer protocol;~~
and

sending the second basic transmission unit ~~of the virtual circuit~~ from the first end
to the second end of the low-bit-rate artery;

at the second end of the low-bit-rate artery~~[[,]]~~;

receiving the second basic transmission unit ~~of the virtual circuit and;~~

extracting the Common Part Sublayer packets from ~~[[said]]~~ the second basic
transmission unit by demultiplexing the packets from said unit;

determining the ~~connection~~ terminating terminal to which each of the Common
Part Sublayer packets belong and inserting each of the determined Common Part Sublayer ~~packet~~
packets into a third basic transmission unit at a rate of one packet per unit ~~for transmission to an~~
~~addressee user; and~~

sending ~~[[said]]~~ the third basic transmission unit ~~through a network downstream~~
from the second end of the low-bit-rate artery to an adaptation unit of a second switch in the
communications network to which the terminating terminal is assigned ~~to the addressee user; and~~

at the adaptation unit ~~assigned to the addressee user,~~ of the second switch:

extracting the Common Part Sublayer packet from ~~[[the]]~~ each third basic
transmission unit;

determining the address of the terminating terminal;

determining whether any Common Part Sublayer packet has been lost;

extracting the coded frames from the packet of application data; and

decompressing the coded frames to recreate the data from the originating
terminal.

2. (Currently amended) ~~[[A]]~~ The method according to claim 1, further comprising
multiplexing ~~[[of]]~~ data in Common Part Sublayer packets from the same originating

~~user-upstream~~ terminal before transmission to the first end of the low-bit-rate artery and demultiplexing the data in the Common Part Sublayer packets ~~downstream from~~ extracted at the second end of the low-bit-rate artery.

3. (Canceled)

4. (Currently amended) [[A]] The method according to claim 1, ~~further comprising~~ using wherein the second protocol comprises an AAL2 protocol, and wherein the AAL2 protocol is used when multiplexing the Common Part Sublayer packets in the second basic transmission unit of the ~~virtual circuit between the first end and second end of the low bit rate artery.~~

5. (Currently amended) [[A]] The method according to claim 1, wherein the packet of application data is ~~formed of~~ includes a fixed number of successive coded frames, ~~and~~ the Common Part Sublayer packet is formed of the application data packet and a header.

6. (Currently amended) [[A]] The method according to claim 1, ~~further comprising~~ transporting data from the originating user to the adaptation unit assigned to the originating user ~~according to~~ wherein the first protocol comprises an AAL1 [[type]] protocol.

7. (Currently amended) [[A]] The method according to claim 1 further comprising, ~~downstream from the low bit rate artery: if the downstream~~ second end of the low-bit-rate artery corresponds to ~~the upstream~~ a first end of an additional low-bit-rate artery, repeating the ~~actions~~ of multiplexing of the Common Part Sublayer packets from the different originating ~~users~~ terminals in a second basic transmission unit of a ~~virtual circuit set up between the first end and second end of the additional low bit rate artery, and sending the basic transmission unit of the virtual circuit~~ for transmission from the first end to [[the]] a second end of the additional low-bit-rate artery.

8. (Canceled)

9. (Currently amended) ~~[[A]]~~ The method according to claim 1, further comprising using a user-to-user information (UI) field in ~~[[a]]~~ the header of the Common Part Sublayer packet to check the integrity of the data sent between the originating ~~[[user]]~~ terminal and the ~~addressee user in communication~~ terminating terminal.

10. (Currently amended) ~~[[A]]~~ The method according to claim 1, wherein the data from the originating ~~[[user]]~~ terminal comprises video or digital voice data.

11. (Currently amended) ~~A device~~ An apparatus for data transmission between ~~at least two users~~ an originating terminal and a terminating terminal in a communications network comprising at least one low-bit-rate artery and at least one ~~or more~~ standard-bit-rate ~~arteries~~ artery, ~~a basic transmission unit, and supporting at least one adaptation layer protocol~~, wherein the ~~device~~ apparatus comprises:

~~at least one~~ a multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is ~~adapted to the switching of~~ configured to switch packets ~~conveyed~~ transmitted in ~~[[the]]~~ basic transmission units according to ~~[[the]]~~ an adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, ~~and where the~~ wherein data transmitted on the at least one ~~or more~~ standard-bit-rate ~~arteries are~~ artery is multiplexed onto the at least one low-bit-rate artery; and

an adaptation unit associated with the terminating terminal, wherein the adaptation unit is configured to:

extract the packets from the basic transmission units;

determine whether any packet in the basic transmission units has been lost; and

extract the data from the packets.

12. (Currently amended) ~~A device~~ The apparatus according to claim 11 further comprising:

a shuffler configured to transmit ~~[[a]]~~ first basic transmission ~~[[unit]]~~ units to the multiplexer device for transmission through the at least one low-bit-rate artery and ~~carry out a transparent switching of the~~ further configured to transparently switch basic transmission units that ~~do not have to travel~~ are not to be transmitted through ~~[[a]]~~ the at least one low-bit-rate artery,

wherein the packetization function of the multiplexer device is configured to extract the packets from the first basic transmission units ~~intended to travel through a low bit rate artery and for packetization of~~ and to insert the packets ~~[[in new]]~~ into second basic transmission units ~~in multiplexed mode~~ for ~~[[each]]~~ transmission through the at least one low-bit-rate artery, and

a table ~~adapted for determining~~ configured to determine the at least one low-bit-rate artery over which the packets in the second basic transmission units are ~~intended to travel~~ to be transmitted.

13. (Currently amended) ~~A device~~ The apparatus according to claim 12, wherein the ~~network supports~~ adaptation layer protocol is an AAL2 ~~type adaptation~~ protocol.

14. (Currently amended) ~~A device~~ The apparatus according to claim 13, wherein the ~~device~~ apparatus is an ATM switch ~~equipped with a~~ that includes the multiplexer device, wherein the multiplexer device is configured to switch Common Part Sublayer packets among the several virtual ~~arteries~~ lines constituted by ATM connections in multiplexed or non-multiplexed AAL2 mode.

15. (Currently amended) A network configured to convey data ~~in a connection~~ between at least two ~~[[users]]~~ terminals, the network comprising:

one or more low-bit-rate arteries; ~~[[and]]~~

one or more standard-bit-rate arteries; ~~at least one adaptation layer protocol and one basic transmission unit, wherein the network comprises at least one device comprising~~

~~at least one~~ a multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is ~~adapted to the switching of~~ configured to switch packets ~~conveyed~~ transmitted in ~~[[the]]~~ basic transmission units ~~according to the adaptation layer protocol~~ among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, ~~and where the~~ wherein data transmitted on the one or more standard-bit-rate arteries ~~[[are]]~~ is multiplexed onto the one or more low-bit-rate ~~artery~~ arteries, ~~[[this]]~~ and wherein at least one multiplexer device being is positioned upstream to and downstream from a data transmission on a low-bit-rate artery; and

a device associated with the terminating terminal, wherein the device is configured to extract the packets from the basic transmission units, determine whether any packet has been lost, and extract the data from the packets.

16. (Currently amended) A network according to claim 15, wherein the multiplexer device is incorporated into an ATM switch.

17. (Currently amended) The network of Claim 15, wherein network comprises at least two ~~[[said]]~~ of the multiplexer devices, ~~[[with]]~~ wherein a first multiplexer device is positioned at a first end of a low-bit-rate artery and a second multiplexer device is positioned at a second end of the low-bit-rate artery,

wherein, ~~in multiplexed mode,~~ the first multiplexer device is ~~adapted~~ configured to:
~~use the packetization function to extract multiple~~ a plurality of packets from first basic transmission units received from different originating ~~users~~ terminals;

multiplex ~~[[said]]~~ the extracted packets in a second basic transmission unit of a virtual circuit ~~[[set up]]~~ between the first end and the second end of the low-bit-rate artery for

~~transmission of;~~ and send the second basic transmission unit of ~~the virtual circuit~~ from the first end to the second end of the low-bit-rate artery;

and wherein, ~~in multiplexed mode,~~ the second multiplexer device is ~~adapted~~ configured to:

receive the second basic transmission unit ~~of the virtual circuit~~;

~~use the packetization function to extract the packets from [[said]]~~ the second basic transmission unit ~~by demultiplexing the packets from said unit~~;

determine the ~~connection~~ terminating terminal to which each of the packets belong; and

insert each ~~packet~~ of the packets into a ~~[[new]]~~ third basic transmission unit at a rate of one packet per unit for transmission to ~~an addressee user~~ the terminating terminal; ~~and send said new basic transmission unit to the addressee user.~~

18. (New) The method according to claim 1, wherein if it is determined that any Common Part Sublayer packet has been lost, then generating conventional data to replace the lost Common Part Sublayer packet.

19. (New) The method according to claim 1, wherein the packet of application data further includes a signaling byte indicating a mode of operation comprising at least one of voice, fax, and the compression algorithm.

20. (New) The apparatus according to claim 11, wherein if the adaptation unit determines that any packet has been lost, the adaptation unit is further configured to generate conventional data to replace the lost packet.

21. (New) The network according to claim 15, wherein if the device determines that any packet has been lost, the device is configured to generate conventional data to replace the lost packet.